

REMARKS

Claim 26 has been canceled. Claims 15-17 and 27-30 are currently pending in this application.

Claims 15-17 and 26 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Tower, U.S. Patent No. 4,811,371 (Tower). This rejection is respectfully traversed.

Independent claim 15 recites a "method of forming a pixel" comprising, *inter alia*, "forming a transfer transistor having a gate on said substrate and adjacent said photosensor; forming a reset transistor having a gate on said substrate and on a side of said transfer transistor gate opposite said photosensor; forming a floating diffusion region on said substrate and between said transfer and reset transistor gates" and "forming a gate capacitor over said substrate, the gate capacitor being located between said transfer and reset transistor gates and electrically connected to the floating diffusion region." Independent claim 17 recites a "pixel of an imager" comprising, *inter alia*, "a transfer transistor having a gate on said substrate and adjacent said photosensor; a reset transistor having a gate on said substrate and on a side of said transfer transistor gate opposite said photosensor; a diffusion region for receiving photogenerated charges from said photosensing region, said diffusion region being between said transfer and reset transistor gates" and "at least one capacitor switchably operable to increase capacitance of said diffusion region, said capacitor having a gate located between said transfer and reset transistor gates."

Tower relates to modifying the effective capacitance of the floating diffusion in a floating diffusion electrometer to adjust electrometer sensitivity. Tower discloses an output circuit 3 including charge transfer channel controlled by a succession of gate electrodes 10-17 that operate in three phases to transfer charge packets. The charge

packets are transferred to a floating diffusion 5 for sensing. The floating diffusion is connected to the gate of a transistor 7. After each charge packet is sensed, it is drained away to the reset drain diffusion 6. Tower at col. 3, line 3 to col. 4, line 41.

Tower fails to disclose all limitations of Independent claims 15 and 17. Specifically, Tower does not disclose a pixel cell having "a transfer transistor having a gate on said substrate and adjacent said photosensor" or "a reset transistor having a gate on said substrate and on a side of said transfer transistor gate opposite said photosensor;" or a method for forming such a pixel cell. Instead, Tower relates to a CCD type structure for transferring and draining charge packets by operation of gate electrodes using particularly timed clocking signals. Tower teaches only that the floating diffusion is connected to the gate of a transistor 7. Therefore, Applicant respectfully requests the withdrawal of the rejection of claims 15-17.

Independent claim 26 has been canceled. Accordingly the rejection of claim 26 is moot. Applicant reserves the right to pursue the subject matter of claim 26 in this and other applications.

Claims 27 and 28 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Tower in view of Rhodes et al., U.S. Patent Application Publication No. 2004/0251394 (Rhodes). This rejection is respectfully traversed.

Applicant respectfully submits that Rhodes is not a proper reference under 35 U.S.C. § 103(a) pursuant to 35 U.S.C. § 103(c). Section 103(c) states that subject matter developed by another person, which qualifies as prior art only under sections 102 (e), (f) and (g) does not preclude patentability under section 103 where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

Rhodes is only a reference pursuant to 35 U.S.C. § 102(e), as it was published after July 15, 2005, the filing date of the present application. Further, at the time the present invention was made, the invention and the subject matter of Rhodes were owned by or subject to an obligation of assignment to Micron Technology, Inc. The attached assignment of Rhodes to Micron Technology, Inc., dated June 5, 2003, and recorded in the United States Patent and Trademark Office (USPTO) at Patent Reel 014175 Frame 0049; and the attached assignment of the present invention to Micron Technology, Inc., dated July 22, 2003, and recorded in the United States Patent and Trademark Office (USPTO) at Patent Reel 014667 Frame 0989, evidence this common ownership. Therefore, Rhodes is not a proper reference under 35 U.S.C. § 103(a), and Applicant respectfully requests withdrawal of this rejection.

Claims 29 and 30 are objected to for being dependent upon a rejected base claim. Applicant graciously acknowledges the indication that claims 29 and 30 contain allowable subject matter. In light of the amendments and remarks herein, Applicant respectfully requests the withdrawal of this objection.

Application No. 10/618,627
Amendment dated November 14, 2005
Reply to Office Action of August 15, 2005

Docket No.: M4065.0956/P956

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: November 14, 2005

Respectfully submitted,

By 

Thomas J. D'Amico

Registration No.: 28,371

Elizabeth Parsons

Registration No.: 52,499

DICKSTEIN SHAPIRO MORIN &
OSHINSKY LLP

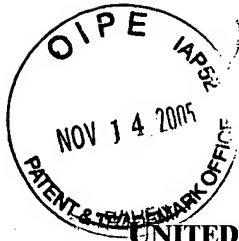
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Attorneys for Applicant

Attachments



UNITED STATES PATENT AND TRADEMARK OFFICE

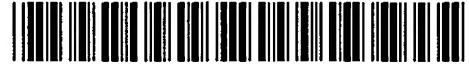
M4065.0936/936

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
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DECEMBER 05, 2003

PTAS

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
THOMAS J. D'AMICO
2101 L STREET NW
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RECORDATION DATE: 06/11/2003

REEL/FRAME: 014175/0049
NUMBER OF PAGES: 4

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).

ASSIGNOR:

RHODES, HOWARD E.

DOC DATE: 06/05/2003

ASSIGNOR:

HONG, SUNGWON

DOC DATE: 06/05/2003

ASSIGNEE:

MICRON TECHNOLOGY, INC.
8000 S. FEDERAL WAY
BOISE, IDAHO 83707-0006

SERIAL NUMBER: 10458262

PATENT NUMBER:

FILING DATE: 06/11/2003

ISSUE DATE:

DEC 17 PM 12:13

ALLYSON PURNELL, EXAMINER



ASSIGNMENT DIVISION
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06-18-2003



Form PTO-1595

(Rev. 03/01)

OMB No. 0651-0027 (exp. 5/31/2002)

U.S. DEPARTMENT OF COMMERCE
U.S. Patent and Trademark Office

102475841

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1. Name of conveying party(ies):

Howard E. Rhodes and Sungkwon Hong

Additional name(s) of conveying party(ies) attached?

☐ Yes☒ No

3. Nature of Conveyance:

☒ Assignment☐ Merger☐ Security Agreement☐ Change of Name☐ Other

Execution Date: June 5, 2003

2. Name and address of receiving party(ies)

Name: Micron Technology, Inc.

Internal Address:

Street Address:

Micron Technology, Inc.
8000 S. Federal Way

City: Boise

State: ID

Zip: 83707-0006

Additional name(s) & address(es) attached:

☐ Yes☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the new application is:

A. Patent Application No.(s):

This application

10458262

B. Patent No.(s):

Additional numbers attached?

☐ Yes☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Thomas J. D'Amico

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP

Internal Address: Atty. Dkt.: M4065.0936/P936

Street Address:

2101 L Street NW

City:
WashingtonState:
DCZip:
20037-1526

6. Total number of applications and patents involved:

1

7. Total fee (37 CFR 3.41)

\$ 40.00

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Thomas J. D'Amico
Name of Person Signing

Signature

June 10, 2003
Date

Total number of pages including cover sheet, attachments, and documents: 5

06/12/2003 ANABI1 00000024 10458262

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40.00

ASSIGNMENT AND AGREEMENT

For value received, we, Howard E. Rhodes and Sungkwon Hong, hereby sell, assign and transfer to Micron Technology, Inc., a corporation of the State of Delaware, having an office at 8000 S. Federal Way, Boise, Idaho 83706-9632, U.S.A., and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to an invention entitled DUAL CONVERSION GAIN IMAGERS, described in an application for Letters Patent of the United States, executed by us of even date herewith, and all the rights and privileges in said application and under any and all Letters Patent that may be granted in the United States for said inventions; and we also concurrently hereby sell, assign and transfer to Micron Technology, Inc. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

We authorize Micron Technology, Inc. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from us, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

We hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Micron Technology, Inc. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

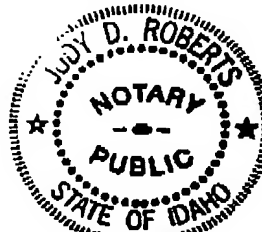
We request that any and all patents for said inventions be issued to Micron Technology, Inc. in the United States and in all countries foreign to the United States, or to such nominees as Micron Technology, Inc. may designate.

We agree that, when requested, we shall, without charge to Micron Technology, Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.

Howard E. Rhodes
Howard E. Rhodes

Date: 6/5/03

United States of America)
State of Idaho) ss.:
County of ada)



On this 5th day of June, 2003, before me personally came Howard E. Rhodes, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.

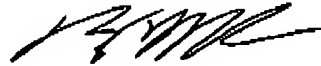
Judy D. Roberts
Notary Public

Jocket: M4065.0936/P936

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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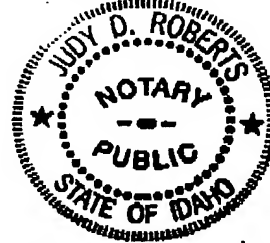
Signature Page for Second Inventor




Sungkwon Hong

Date: 06-03-03

United States of America)
State of Idaho) ss.:
County of ada)



On this 5th day of June, 2003, before me
personally came Sungkwon Hong, to me known to be the individual
described in and who executed the foregoing instrument, and acknowledged execution
of the same.


Notary Public



UNITED STATES PATENT AND TRADEMARK OFFICE

UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND
DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE

M4065.0956/P956
JUN - 2 2004

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MAY 28, 2004

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DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP
THOMAS J. D'AMICO
2101 L STREET NW
WASHINGTON, DC 20037-1526



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RECORDATION DATE: 10/27/2003

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NUMBER OF PAGES: 3

BRIEF: ASSIGNMENT OF ASSIGNOR'S INTEREST (SEE DOCUMENT FOR DETAILS).
DOCKET NUMBER: M4065.0956/P956

ASSIGNOR:

HONG, SUNGKWON C.

DOC DATE: 07/22/2003

ASSIGNEE:

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8000 S. FEDERAL WAY
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SERIAL NUMBER: 10618627

FILING DATE: 07/15/2003

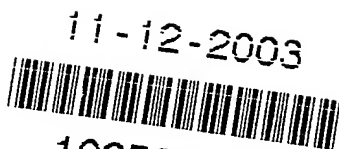
PATENT NUMBER:

ISSUE DATE:

TITLE: 4T CMOS IMAGE SENSOR WITH FLOATING DIFFUSION GATE CAPACITOR

014667/0989 PAGE 2

JOANN STEWART, EXAMINER
ASSIGNMENT DIVISION
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PATENT

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Sungkwon C. Hong

Additional name(s) of conveying party(ies) attached? ☐ Yes ☒ No

3. Nature of Conveyance:

☒ Assignment

☐ Merger

☐ Security Agreement

☐ Change of Name

☐ Other

Execution Date: July 22, 2003

2. Name and address of receiving party(ies)

Name: MICRON TECHNOLOGY, INC.

Internal Address:

Street Address:

Micron Technology, Inc.
8000 S. Federal Way

City: Boise

State: ID Zip: 83707-0006

Additional name(s) & address(es) attached: ☐ Yes ☒ No

4. Application number(s) or patent number(s):

If this document is being filed together with a new application, the execution date of the new application is:

A. Patent Application No.(s):

10/618,627

B. Patent No.(s):

Additional numbers attached? ☐ Yes ☒ No

5. Name and address of party to whom correspondence concerning document should be mailed:

Name: Thomas J. D'Amico

DICKSTEIN SHAPIRO MORIN & OSHINSKY LLP

Internal Address: Atty. Dkt.: M4065.0956/P956

Street Address:
2101 L Street NW

City:
Washington

State: DC Zip: 20037-1526

6. Total number of applications and patents involved: 1

7. Total fee (37 CFR 3.41) \$ 40.00

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8. Deposit account number:

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9. Statement and signature.

To the best of my knowledge and belief, the foregoing information is true and correct and any attached copy is a true copy of the original document.

Thomas J. D'Amico
Name of Person Signing

Signature

October 27, 2003
Date

Total number of pages including cover sheet, attachments, and documents: 3

ASSIGNMENT AND AGREEMENT


For value received, I, Sungkwon (Chris) Hong, hereby sell, assign and transfer to Micron Technology, Inc., a corporation of the State of Delaware, having an office at 8000 S. Federal Way, Boise, Idaho 83706-9632, U.S.A., and its successors, assigns and legal representatives, the entire right, title and interest, for the United States of America, in and to certain inventions related to an invention entitled 4T CMOS IMAGE SENSOR WITH FLOATING DIFFUSION GATE CAPACITOR, described in an application for Letters Patent of the United States, executed by me of even date herewith, and all the rights and privileges in said application and under any and all Letters Patent that may be granted in the United States for said inventions; and I also concurrently hereby sell, assign and transfer to Micron Technology, Inc. the entire right, title and interest in and to said inventions for all countries foreign to the United States, including all rights of priority arising from the application aforesaid, and all the rights and privileges under any and all forms of protection, including Letters Patent, that may be granted in said countries foreign to the United States for said inventions.

I authorize Micron Technology, Inc. to make application for such protection in its own name and maintain such protection in any and all countries foreign to the United States, and to invoke and claim for any application for patent or other form of protection for said inventions, without further authorization from me, any and all benefits, including the right of priority provided by any and all treaties, conventions, or agreements.

I hereby consent that a copy of this assignment shall be deemed a full legal and formal equivalent of any document which may be required in any country in proof of the right of Micron Technology, Inc. to apply for patent or other form of protection for said inventions and to claim the aforesaid benefit of the right of priority.

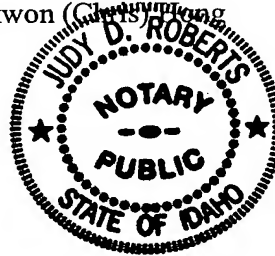
I request that any and all patents for said inventions be issued to Micron Technology, Inc. in the United States and in all countries foreign to the United States, or to such nominees as Micron Technology, Inc. may designate.

I agree that, when requested, I shall, without charge to Micron Technology, Inc. but at its expense, sign all papers, and do all acts which may be necessary, desirable or convenient in connection with said applications, patents, or other forms of protection.


Sungkwon (Chris) Hong

Date: 7/22/03

United States of America)
State of Idaho) ss.:
County of ada)



On this 22 day of July, 2003, before me personally came Sungkwon (Chris) Hong, to me known to be the individual described in and who executed the foregoing instrument, and acknowledged execution of the same.


Notary Public